System Specification

Simulation Gateway Phase II Thread, Thor DP1

Checkout and Launch Control System (CLCS)

84K00302-028

Simulation Gateway Phase 2

Assessment

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Version 1.0

Simulation Gateway Phase 2
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1.

1. Simulation Interface to RTCN Thread

1.1 Overview

The Simulation Interface to the RTCN Thread purpose is to provide the capability to connect the SGOS Math Models to the CLCS RTCN without the use of front end gateways or VSI equipment.

The CLCS Simulation Interface to the RTCN does not provide SGOS Math Model connectivity for the Desktop Debug Environment being started for Thor. The CLCS Desktop Debug environment will be supported by the Simulation Rehost effort.

1.2 Concept

The Simulation Interface to the RTCN Thread develops the capability to connect the SGOS Math Models to the CLCS sets. *The main focus of this thread is on providing additional support for CLCS measurement and command types.* The Simulation Interface to the RTCN Thread supports the following two functions:

- Provide Gateway Change Packet(s)
- Receive CCP Command Request Packet(s)

The system shall demonstrate the ability to issue commands to Ground Support Equipment (GSE) and Launch Data Bus (LDB) Analog and Discrete stimulus. It will also provide for the conversion of GSE, PCM, and LDB measurement values to Gateway Change Packet Formats. The full set of command requests will not be supported at this time.

1.3 Simulation Interface to RTCN Specification

The Simulation Interface to RTCN Phase 2 Statement of Work is as follows:

1. Support a single link at a time.
2. Provide for the conversion of GSE, PCM, and LDB measurement values to Gateway Change Packet Formats.
3. Provide support for LDB FD measurement and FD commands by way of CCP Command Request Packet(s) from the RTCN.
4. Provide for the stimulation of most model GSE stimulus by way of CCP Command Request Packets(s) from the RTCN.

1.4 Simulation Interface to RTCN Schedule

Design Panel	10/6/97	10/7/97
Code and Unit Test (UT)	1/12/98	2/6/98
Preliminary CM Drop	1/12/98	1/12/98
Perform Coding and Unit Testing	1/12/98	2/6/98
Unit Test Complete	2/6/98	2/6/98
Unit Integration Testing (UIT)	2/9/98	2/20/98
Perform Integration Testing	2/9/98	2/20/98
UIT Complete	2/20/98	2/20/98
Configuration Management (CM)	2/23/98	2/27/98
Formal CM Drop	2/23/98	2/27/98
Support CM	2/23/98	2/27/98
CSCI Integration Testing (CIT)	3/2/98	3/13/98
Perform CIT	3/2/98	3/13/98
CIT Complete	3/13/98	3/13/98
Integration Test Phase	3/9/98	3/20/98
Develop CIT Report	3/9/98	3/13/98

Support System Integration & Test	3/9/98	3/20/98	

2. CI Assessments

2.1 Simulation Gateway Assessment

The Simulation Gateway CSCI connects the SGOS Math Models to the CLCS RTCN. The Simulation Gateway provides a means for Application Software to be checked out against a running Math Model without the use of front end gateways or a Video Simulation Interface. New capabilities for this CSCI will be to support LDB measurements and commands and PCM measurements.

In addition to Gateway Control Processor Services, the Simulation Gateway is comprised of a Simulation Interface Board (SIB) and a Simulation Engine. The SIB will provide all translation and communication functions necessary to pass commands to and receive measurements from the Simulation Engine. The Simulation Engine will run the model as it currently does under the SGOS re-platform effort.

Build and Load Work Required

Provide an automated facility for the math model and Translation tables to be built.

CSCI Assessment

Function Name	CSCI Labor (man-month)	% of CSCI	Function EP
Model Selection Capability	1.5		
Build and Load	0.5		
Total	**2.0**		

Lines of Code

Unknown.

Documentation

N/A

Assumptions

None.

3. COTS Products Dependencies

3.1 SW Products Dependency List

N/A

3.2 HW Products Dependency List

N/A